1. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$4^{-5x+5} = 343^{-3x-2}$$

   A. $x \in [-1.17, -0.46]$

   B. $x \in [-2.69, -1.42]$

   C. $x \in [9.02, 9.75]$

   D. $x \in [3.35, 3.68]$

   E. There is no Real solution to the equation.

2. Which of the following intervals describes the Domain of the function below?

$$f(x) = e^{x+2} + 7$$

   A. $(a, \infty), a \in [-14, -4]$

   B. $(-\infty, a), a \in [7, 13]$

   C. $(-\infty, a], a \in [7, 13]$

   D. $[a, \infty), a \in [-14, -4]$

   E. $(-\infty, \infty)$

3. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$2^{-3x+4} = \left(\frac{1}{25}\right)^{-2x-3}$$

   A. $x \in [-0.9, 0.5]$

   B. $x \in [6.1, 7.7]$

   C. $x \in [-8.9, -5]$

   D. $x \in [0.5, 1]$

   E. There is no Real solution to the equation.

4. Solve the equation for x and choose the interval that contains the solution (if it exists).
$$\log_5\left(2x+5\right)+5=3$$

A. $x \in [57, 62]$

B. $x \in [-26.5, -14.5]$

C. $x \in [-14.5, -11.5]$

D. $x \in [-5.48, 2.52]$

E. There is no Real solution to the equation.

5. Solve the equation for x and choose the interval that contains x (if it exists).
$$7 = \ln \sqrt[7]{\frac{9}{e^{5x}}}$$

A. $x \in [-2.4, -1.5]$

B. $x \in [-9.7, -9.3]$

C. $x \in [-3.5, -2.9]$

D. There is no Real solution to the equation.

E. None of the above.

6. Which of the following intervals describes the Domain of the function below?
$$f(x) = \log_2\left(x - 5\right) + 9$$

A. $(a, \infty), a \in [4.7, 5.6]$

B. $[a, \infty), a \in [8.7, 9.4]$

C. $(-\infty, a), a \in [-5.2, -1.7]$

D. $(-\infty, a], a \in [-13.9, -7.3]$

E. $(-\infty, \infty)$

7. Which of the following intervals describes the Range of the function below?

$$f(x) = e^{x-9} + 6$$

   A. $(-\infty, a), a \in [-8, -1]$

   B. $[a, \infty), a \in [4, 7]$

   C. $(-\infty, a], a \in [-8, -1]$

   D. $(a, \infty), a \in [4, 7]$

   E. $(-\infty, \infty)$

8. Solve the equation for x and choose the interval that contains the solution (if it exists).

$$\log_3 (-4x + 6) + 4 = 2$$

   A. $x \in [0.27, 0.86]$

   B. $x \in [2.77, 4.53]$

   C. $x \in [-1.97, -0.05]$

   D. $x \in [1.42, 2.24]$

   E. There is no Real solution to the equation.

9. Which of the following intervals describes the Domain of the function below?

$$f(x) = \log_2 (x - 3) - 2$$

   A. $(-\infty, a], a \in [1.6, 2.21]$

   B. $[a, \infty), a \in [-2.49, -1.67]$

   C. $(-\infty, a), a \in [-3.51, -2.15]$

   D. $(a, \infty), a \in [2.45, 3.96]$

   E. $(-\infty, \infty)$

10. Solve the equation for x and choose the interval that contains x (if it exists).

$$15 = \ln \sqrt[5]{\frac{29}{e^{4x}}}$$

   A. $x \in [-5.23, -1.23]$

   B. $x \in [-20.91, -16.91]$

   C. $x \in [-6.66, -4.66]$

   D. There is no Real solution to the equation.

   E. None of the above.